

GROUND-WATER QUALITY

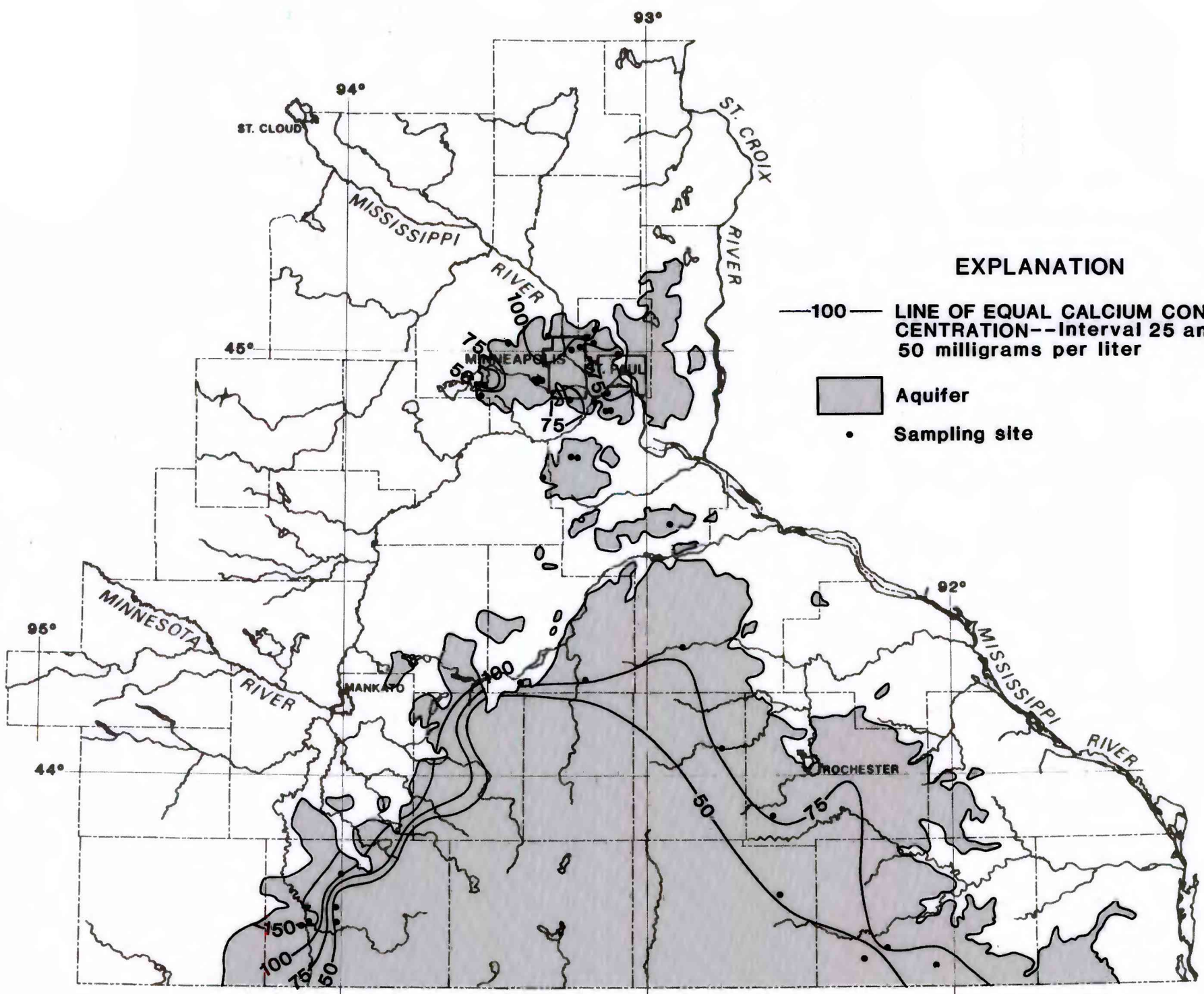


Figure 10.--Calcium concentration

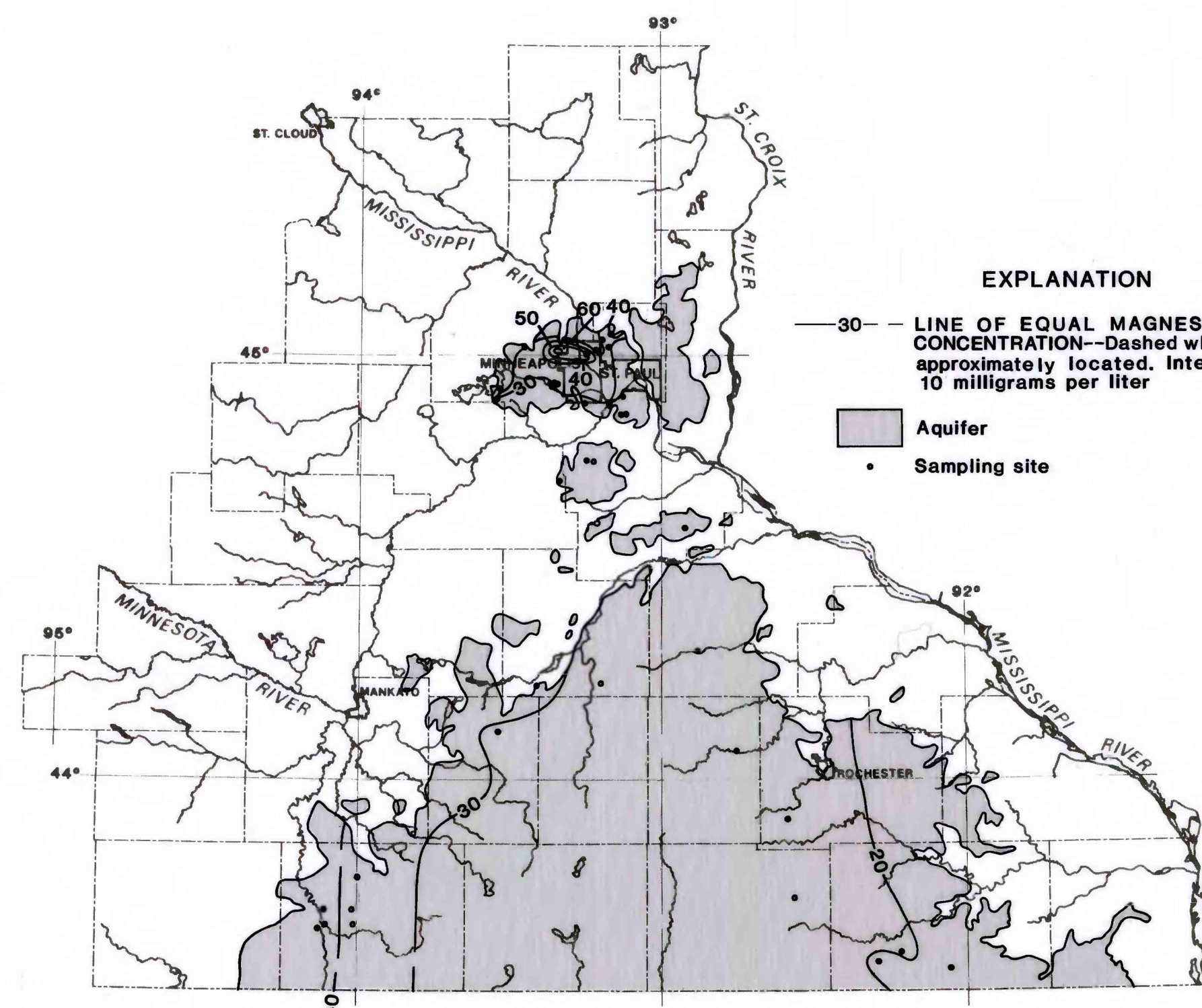


Figure 11.--Magnesium concentration

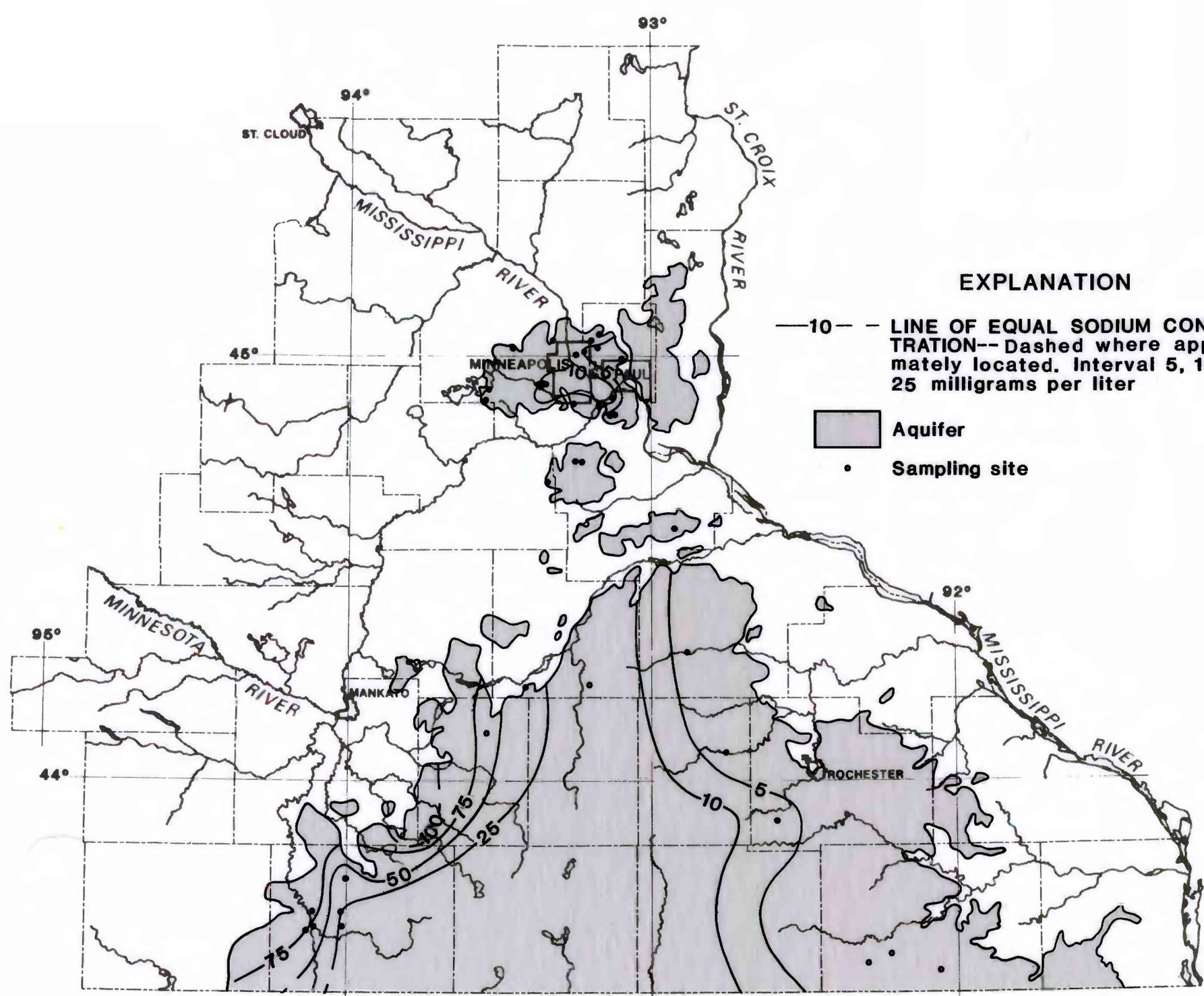


Figure 12.--Sodium concentration

WATER QUALITY

The quality of water in the St. Peter aquifer is generally acceptable for most uses despite some local problems. The mean, median, and range of selected constituents and properties and recommended U.S. Environmental Protection Agency standards for public supply are given in table 2. Data used in the preparation of this table and figures 8 through 14, which show the areal distribution of dissolved solids and major ions, are from the U.S. Geological Survey Water Data Storage and Retrieval System (WATSTORE), from the Storage and Retrieval System (STORE) maintained by the U.S. Environmental Protection Agency, and from U.S. Geological Survey Hydrologic Atlases. Virtually all the data were collected during 1960-80.

Table 2.--Summary of representative water-quality analyses of water from the aquifer

Values are given in milligrams per liter except as indicated. (pH, alkalinity per centimeter; $\mu\text{S/cm}$, micrograms per liter)						
Parameter	Mean	Median	Range	U.S. Standard	Maximum	Minimum
Specific conductance (microhm/cm at 25°C)	310	272	370	310	340	280
pH	7.4	7.4	6.5-8.5	6.5-8.5	8.5	6.5
Temperature, °C	11.0	11.0	9.0-20.0	9.0-20.0	20.0	9.0
Hardness as CaCO_3 (mg/L)	300	300	100-610	300	610	100
Calcium, dissolved (mg/L)	77	77	45-160	160	160	45
Magnesium, dissolved (mg/L)	29	29	14-50	50	50	14
Sulfate, dissolved (mg/L)	12	12	1-19	19	19	1
Chloride, dissolved (mg/L)	3	3	1-22	22	22	1
Dissolved solids (mg/L)	310	310	210-610	610	610	210
Total dissolved solids (mg/L)	310	310	210-610	610	610	210
Total suspended solids (mg/L)	0	0	0-1	1	1	0
Fluoride, dissolved (mg/L)	0.7	0.7	0-1.1	1.1	1.1	0
Iron, dissolved (mg/L)	0.3	0.3	0-2	2	2	0
Aluminum, dissolved (mg/L)	0.1	0.1	0-2	2	2	0
Ammonia-nitrogen (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Nitrate-nitrogen (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Phosphate (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Barium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Copper (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Zinc (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Lead (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Cadmium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Mercury (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Chromium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Manganese (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Selenium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Vanadium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Antimony (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Strontium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Silica (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Boron (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Fluoride (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Iodine (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Lithium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Sodium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Potassium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Calcium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Magnesium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Sulfate (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Chloride (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Dissolved solids (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Total dissolved solids (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Total suspended solids (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Fluoride (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Iron (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Aluminum (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Ammonia-nitrogen (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Nitrate-nitrogen (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Phosphate (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Barium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Copper (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Zinc (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Lead (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Cadmium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Mercury (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Chromium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Manganese (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Selenium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Vanadium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Antimony (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Strontium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Silica (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Boron (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Fluoride (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Iodine (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Lithium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Sodium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Potassium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Calcium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Magnesium (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Sulfate (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Chloride (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Dissolved solids (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Total dissolved solids (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Total suspended solids (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Fluoride (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Iron (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0
Aluminum (mg/L)	0.0	0.0	0-0.1	0.1	0.1	0